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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,285	07/30/2003	Robert W. Hulvey	BP2482	9709
34399	7590	12/01/2005	EXAMINER	
GARLICK HARRISON & MARKISON LLP			JACKSON, BLANE J	
P.O. BOX 160727			ART UNIT	
AUSTIN, TX 78716-0727			PAPER NUMBER	
			2685	

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,285

Applicant(s)

HULVEY, ROBERT W.

Examiner

Blane J. Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 7 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims introduce a contradiction to the substance of their parent claims, 1, 6 and 16. Claims 3, 7 and 18 indicate the clock generator comprises a first and second oscillator module, presumably selected by a logic signal in accordance to figure 5D and the Specification description where claims 1 and 6 suggest a clock generator comprising a single oscillator with bias control indicated by the phrase "providing a first *power level* to the clock generator". It is suggested that claims 1, 6 and likewise 16 are amended to resolve the confusion of the two embodiments of the clock generator. The rejection that follows treats the clock generator of the independent parent claims as comprising a single bias controlled oscillator to reduce power consumption in various device operating modes but with an awareness of the clock generator alternatively comprising two individually selected two oscillators.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. Claim 6 states a "transmitter operation detector operable to detect operation of the transceiver unit" which is not supported in the Specification. The Specification of page 9, lines 10-14 indicate "a transceiver operation detector 516" without specific information as to the method of detection. Consequently, it is expected that "transmitter" is amended to "transceiver" and is reflected in the rejection to follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Challa et al. (US 2003/0144020) with a view to Karlquist et al. (US 2003/0203722).

As to claims 1, 3, 6, 7, 16, 18, 20 and 22, Challa teaches an apparatus, method and system for managing power in a wireless interface system that services communications between a wirelessly enable host and at least one user input device comprising:

A wireless interface unit that wirelessly interfaces with the wirelessly enabled host (figure 1, a wireless communication system (WCD) including radiotelephones, PCMCIA cards and personal digital assistants, paragraph 0003),

With reference to a claim element of claim 6: Challa teaches the wireless interface unit comprises an analog module including a transceiver unit (figure 2,

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transceiver (20), paragraph 0027), a digital module (controller (24)) further comprising a *transceiver* operation detector operable to detect operation of the transceiver unit and a voltage regulator control signal generator operable to generate a voltage regulator reference control signal corresponding to the operation status of the transceiver (controller (24) comprising the processor and control elements to expect and receive pilot signals at the transceiver to signal oscillator(s) selection, paragraphs 0019 and 0020),

A clock generator operable to generate first and second clock signals corresponding to first and second operating states of the wireless interface unit (figure 2, controller (24) to receive one or two, a sleep clock and system clock where one or both comprise the "clock generator", paragraph 0025),

A processing unit operably coupled to the wireless interface unit (controller (24) coupled to transmitter/ receiver (20)),

A power management unit operably coupled to the wireless interface unit, the processing unit and the clock generator (figure 2, the controller (24) combines these functions) wherein the power management unit controls the power consumption of the wireless interface device by providing a *first control signal to select a clock* of the clock generator when the wireless interface unit is in the first operating state and providing a *second control signal to select a clock* of the clock generator when the wireless interface unit is in the second operating state (paragraph 0025; the wireless communication device (WCD) selects the use of a relatively low frequency, low power

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sleep clock (32) during sleep mode and alternatively a high power, high accuracy system clock (31) when in the active state).

Challa further indicates the two operating state clocks may be a single clock that can operate as both system clock and sleep clock to control power consumption, paragraph 0025, but does not teach the power management unit or controller (24) controls the power consumption by providing *a first power level or a second power level* to the clock generator when the wireless interface unit is in the respective operating state.

Karlquist teaches a method to reduce power consumption in a receiver the bias control of the mixer, RF amplifiers and local oscillator with respect to a standby or full operating mode, figure 1, paragraphs 0011-0019. Karlquist teaches a local oscillator in the form of a phase locked loop where current consumption in the PLL can be reduced at the expense of phase noise by lowering the VCO oscillator bias current, figure 2, paragraphs 0020-0021.

Consequently, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the example of the two clocks of Challa with the bias controlled PLL of Karlquist to provide a simple approach to saving power and meet system requirements in the sleep or fully active operating states.

As to claims 2, 8, 17 and 21 with respect to claims 1, 6, 16 and 21, Challa teaches the wireless interface unit comprises an analog module and digital module (figure 2, the transmitter/receiver (20) contains analog and digital modules and the

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controller (24) is a digital module with processor) wherein during the first operating state the analog module is fully operational and during the second operating state the analog module is in a reduced power mode and is not fully operational (during sleep mode, the controller (24) may reduce or eliminate power consumption of various internal components of the WCD including the transceiver (20), paragraph 0031).

As to claim 4, Challa teaches processing unit voltage regulation circuitry couples the processing unit to a voltage source wherein the power management unit controls the operation of the processing unit voltage regulation circuitry to controllably power the processing unit (the controller (24) function combines the processing unit and power management unit and may *reduce or eliminate power consumption of various internal components of the WCD*, paragraphs 0031 and 0040: cause various internal components to power down or otherwise enter a low power (voltage/ current) state).

As to claims 5, 9, 19 and 23 with respect to claims 1, 6, 16 and 20, Challa teaches the wireless interface device enters one of a plurality of power consumption operating states comprising:

Busy mode in which all components of the wireless interface device are powered and operational (WCD may operate in one of more of three defined modes including the awake mode, paragraphs 0040 and 0044),

Idle mode in which the wireless interface unit performs first power conserving operations (intermediate wake period where specific components are powered up, paragraph 0040 and 0041),

Suspend mode in which the wireless interface performs second power conserving operations (one of several intermediate wake periods, paragraphs 0024 and 0040),

Power down mode in which the wireless interface unit and the processing unit are powered down (sleep mode, paragraph 0040).

As to claim 10 with respect to claim 9, Challa teaches the wireless interface unit periodically communicates with the wirelessly enable host in the idle mode (powers up components in the intermediate mode to receive expected timed pilot signal, paragraph 0041).

As to claim 11 with respect to claim 9, Challa teaches the wireless interface unit does not transmit to the wirelessly enable host and the wireless interface unit listens to the transmission of the wirelessly enable host in the suspend mode (intermediate wake period, paragraph 0041).

As to claim 12 with respect to claim 11, Challa teaches the power management unit powers down the wireless interface unit and the processing unit after at least one

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inactivity period during which the at least one user input device is inactive with respect to the input/ output unit (sleep mode, paragraph 0040).

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Challa et al. (US 2003/0144020) and Karlquist et al. (US 2003/0203722) with a view to Zeng (US 2003/0173829).

As to claims 13-15, Challa of Challa modified teaches the wireless communication device (WCD) comprises a cellular radiotelephone, satellite radiotelephone, a PCMCIA card, a personal digital assistant (PDA) all equipped with wireless communication capabilities or the like with power consumption control, paragraph 0018, but does not specifically teach a WCD in the form of a keypad or cursor control device.

Zeng teaches information processing facilities including PDAs an battery powered I/O and /or wireless communications devices such as handsets, electronic mousse, keyboards, trackballs, game controller and PC cameras a desired to comprise low power consumption, paragraph 0004. Zeng, with specific reference to a wireless mouse, teaches the device should include means, a sound activation, to wake-up the device from a sleep mode, paragraph 0019.

It would have been obvious to one of ordinary skill in the art at the time of the invention to realize the wireless communication device of Challa in the alternative forms of Zeng for reduced power consumption.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Heinonen et al. (US 2003/0060176) discloses a dual mode voltage controlled oscillator having controllable bias modes and power consumption. Shohara et al. (US 2005/0043068) discloses communication devices with a reference oscillator and sleep oscillator to support a sleep mode for reduced power consumption. Cadieux et al. (US 2004/0097265) discloses a gated clock to reduce power consumption in a wireless interface device

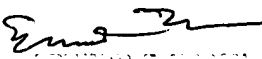
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J. Jackson whose telephone number is (571) 272-7890. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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